FIG. 1

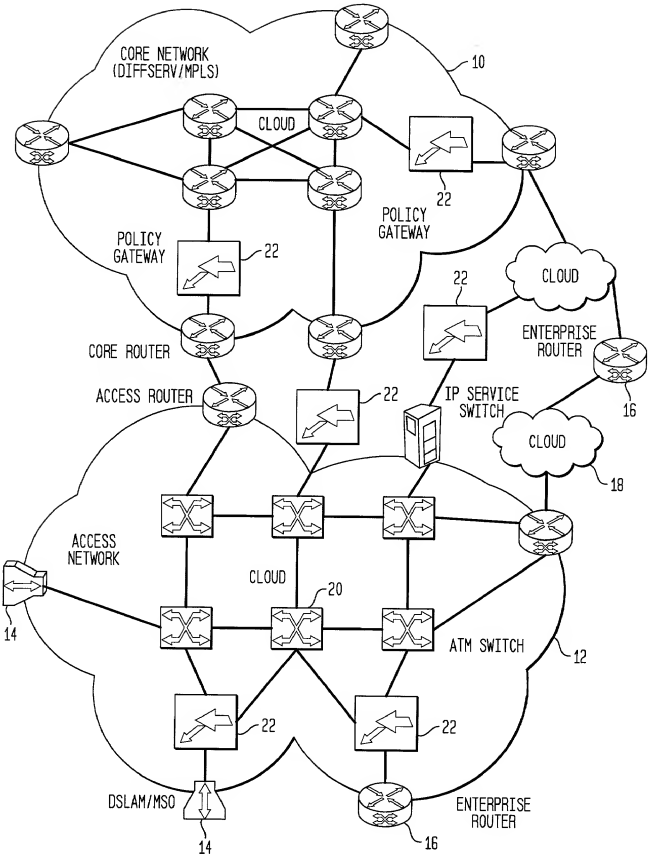

CORE NETWORK
(DIFFSERV/MPLS)
10
CLOUD
22
POLICY
GATEWAY
22
POLICY
GATEWAY
22
CLOUD
CORE ROUTER
ENTERPRISE
ROUTER
ACCESS ROUTER
22
IP SERVICE
SWITCH
16
CLOUD
18
ACCESS
NETWORK
CLOUD
20
14
ATM SWITCH
12
22
22
DSLAM/MSO
ENTERPRISE
ROUTER
14
16

FIG. 2

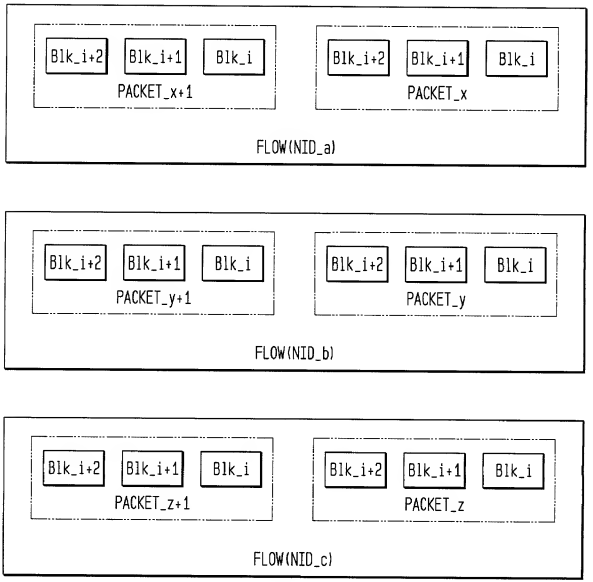

Blk_i+2
Blk_i+1
Blk_i
PACKET_x+1
Blk_i+2
Blk_i+1
Blk_i
PACKET_x
FLOW(NID_a)
Blk_i+2
Blk_i+1
Blk_i
PACKET_y+1
Blk_i+2
Blk_i+1
Blk_i
PACKET_y
FLOW(NID_b)
Blk_i+2
Blk_i+1
Blk_i
PACKET_z+1
Blk_i+2
Blk_i+1
Blk_i
PACKET_z
FLOW(NID_c)

FIG. 3

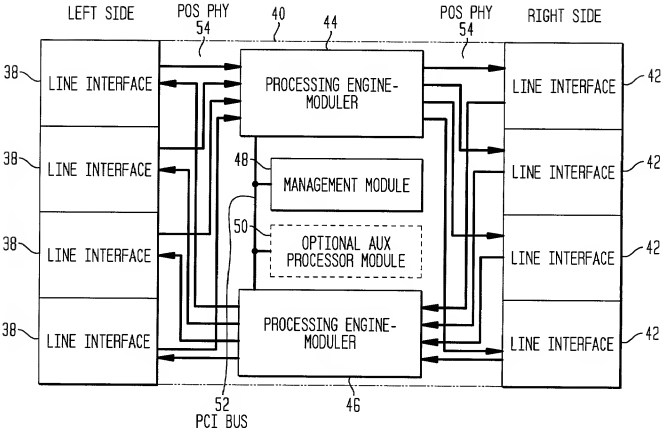

LEFT SIDE
POS PHY
54
40
44
POS PHY
54
RIGHT SIDE
38
LINE INTERFACE
38
LINE INTERFACE
38
LINE INTERFACE
38
LINE INTERFACE
PROCESSING ENGINE-
MODULER
48
MANAGEMENT MODULE
50
OPTIONAL AUX
PROCESSOR MODULE
PROCESSING ENGINE-
MODULER
LINE INTERFACE
42
LINE INTERFACE
42
LINE INTERFACE
42
LINE INTERFACE
42
52
PCI BUS
46

FIG. 4

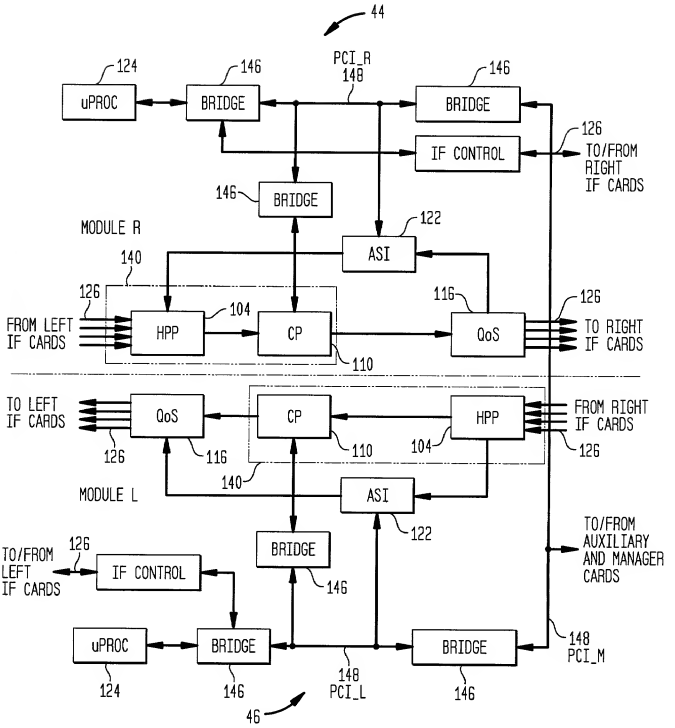

44
124
uPROC
146
BRIDGE
PCI_R
148
146
BRIDGE
126
IF CONTROL
TO/FROM
RIGHT
IF CARDS
146
BRIDGE
MODULE R
122
ASI
140
126
116
126
FROM LEFT
IF CARDS
HPP
104
CP
QoS
TO RIGHT
IF CARDS
110
TO LEFT
IF CARDS
QoS
CP
HPP
FROM RIGHT
IF CARDS
126
116
110
104
126
140
MODULE L
ASI
122
TO/FROM
AUXILIARY
AND MANAGER
CARDS
126
TO/FROM
LEFT
IF CARDS
IF CONTROL
BRIDGE
146
148
PCI_M
uPROC
BRIDGE
BRIDGE
124
146
148
PCI_L
146
46

FIG. 5

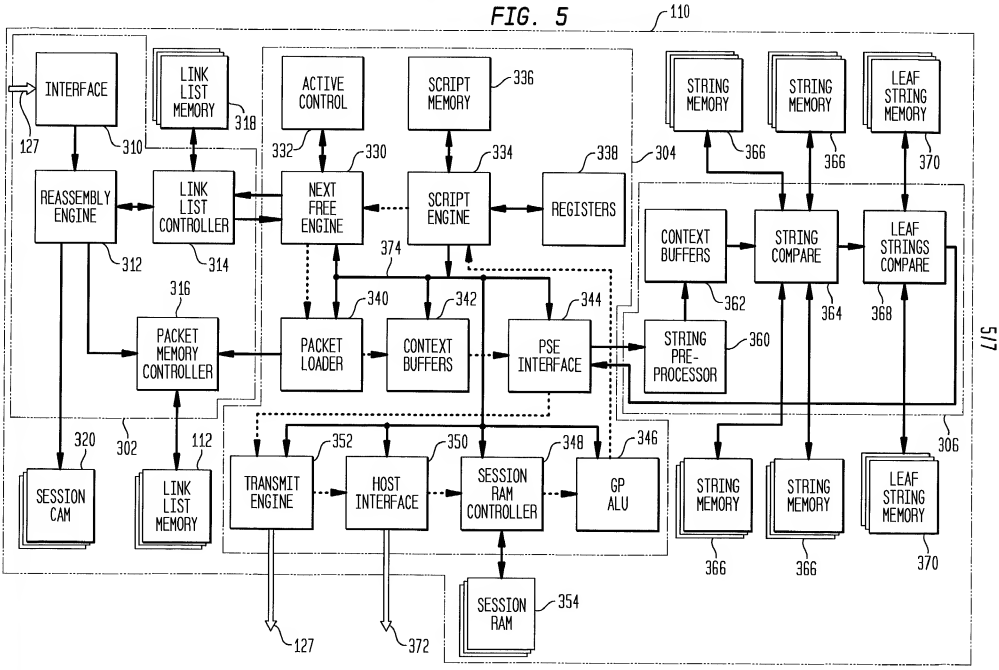

110
INTERFACE
127
310
LINK LIST MEMORY
318
ACTIVE CONTROL
332
SCRIPT MEMORY
336
330
334
338
304
STRING MEMORY
366
STRING MEMORY
366
LEAF STRING MEMORY
370
REASSEMBLY ENGINE
312
LINK LIST CONTROLLER
314
NEXT FREE ENGINE
SCRIPT ENGINE
REGISTERS
374
CONTEXT BUFFERS
362
STRING COMPARE
364
LEAF STRINGS COMPARE
368
316
340
342
344
PACKET MEMORY CONTROLLER
PACKET LOADER
CONTEXT BUFFERS
PSE INTERFACE
STRING PRE-PROCESSOR
360
517
320
302
112
352
350
348
346
306
SESSION CAM
LINK LIST MEMORY
TRANSMIT ENGINE
HOST INTERFACE
SESSION RAM CONTROLLER
GP ALU
STRING MEMORY
366
STRING MEMORY
366
LEAF STRING MEMORY
370
SESSION RAM
354
127
372

FIG. 6

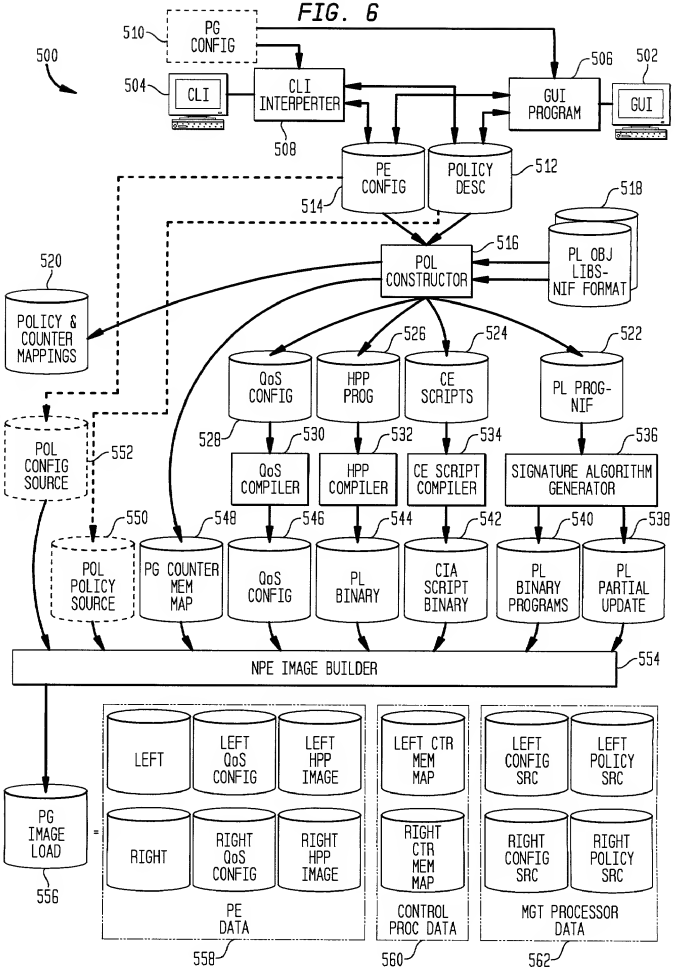
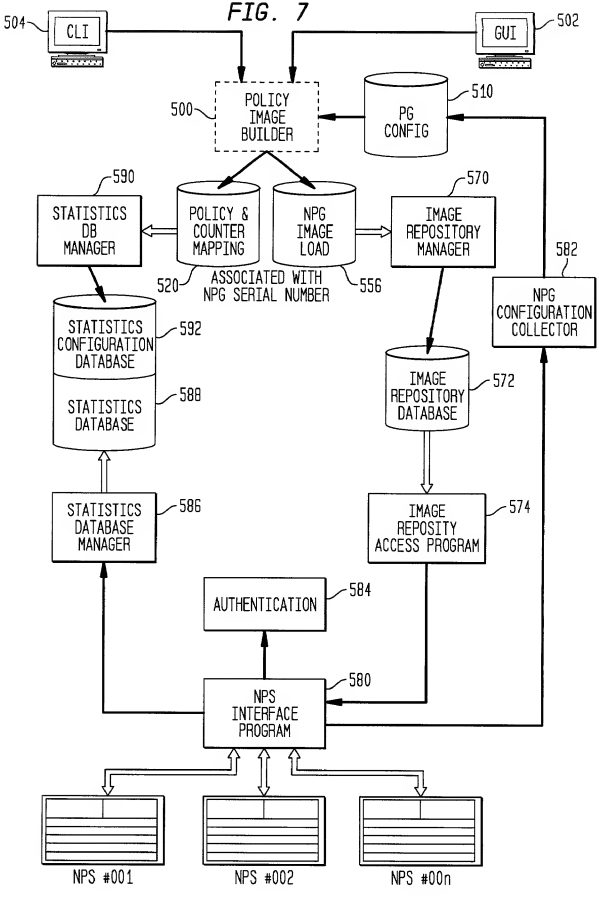

500
PG CONFIG
510
CLI
504
CLI INTERPERTER
508
GUI PROGRAM
506
GUI
502
PE CONFIG
514
POLICY DESC
512
POL CONSTRUCTOR
516
PL OBJ LIBS-NIF FORMAT
518
POLICY & COUNTER MAPPINGS
520
QoS CONFIG
528
HPP PROG
526
CE SCRIPTS
524
PL PROG-NIF
522
POL CONFIG SOURCE
552
QoS COMPILER
530
HPP COMPILER
532
CE SCRIPT COMPILER
534
SIGNATURE ALGORITHM GENERATOR
536
POL POLICY SOURCE
550
PG COUNTER MEM MAP
548
QoS CONFIG
546
PL BINARY
544
CIA SCRIPT BINARY
542
PL BINARY PROGRAMS
540
PL PARTIAL UPDATE
538
NPE IMAGE BUILDER
554
PG IMAGE LOAD
556
LEFT
LEFT QoS CONFIG
LEFT HPP IMAGE
RIGHT
RIGHT QoS CONFIG
RIGHT HPP IMAGE
PE DATA
558
LEFT CTR MEM MAP
RIGHT CTR MEM MAP
CONTROL PROC DATA
560
LEFT CONFIG SRC
LEFT POLICY SRC
RIGHT CONFIG SRC
RIGHT POLICY SRC
MGT PROCESSOR DATA
562

FIG. 7


504
CLI
GUI
502
500
POLICY IMAGE BUILDER
PG CONFIG
510
590
STATISTICS DB MANAGER
POLICY & COUNTER MAPPING
NPG IMAGE LOAD
570
IMAGE REPOSITORY MANAGER
582
520
ASSOCIATED WITH NPG SERIAL NUMBER
556
NPG CONFIGURATION COLLECTOR
STATISTICS CONFIGURATION DATABASE
592
STATISTICS DATABASE
588
IMAGE REPOSITORY DATABASE
572
STATISTICS DATABASE MANAGER
586
IMAGE REPOSITY ACCESS PROGRAM
574
AUTHENTICATION
584
NPS INTERFACE PROGRAM
580
NPS #001
NPS #002
NPS #00n